

FIG. 1

FIG. 2

Block diagram of a control system for a power plant, showing a sequence of blocks:

- Block 30: 2 POLE HP BUTTERWORTH, $f_c = 18.3$, $\delta = 0.6$
- Block 31: 2 POLE HP BUTTERWORTH, $f_c = 18.3$, $\delta = 0.707$
- Block 32: PSEUDO INTEGRATOR, 6.9 Hz
- Block 33: 2 POLE HP BUTTERWORTH, $f_c = 630$, $\delta = 0.6$
- Block 34: 2 POLE HP BUTTERWORTH, $f_c = 630$, $\delta = 0.707$
- Block 35: 2 POLE HP BUTTERWORTH, $f_c = 630$, $\delta = 1.0$
- Block 37: 2 POLE HP BUTTERWORTH, $f_c = 18.3$, $\delta = 1.0$

The output of block 37 is fed back to the input of block 30. A disturbance input 26 is applied to block 32. Block 32 has a gain of 6.9 Hz. The output of block 32 is 36, and the output of block 37 is 40.



FIG. 3

FIG.4

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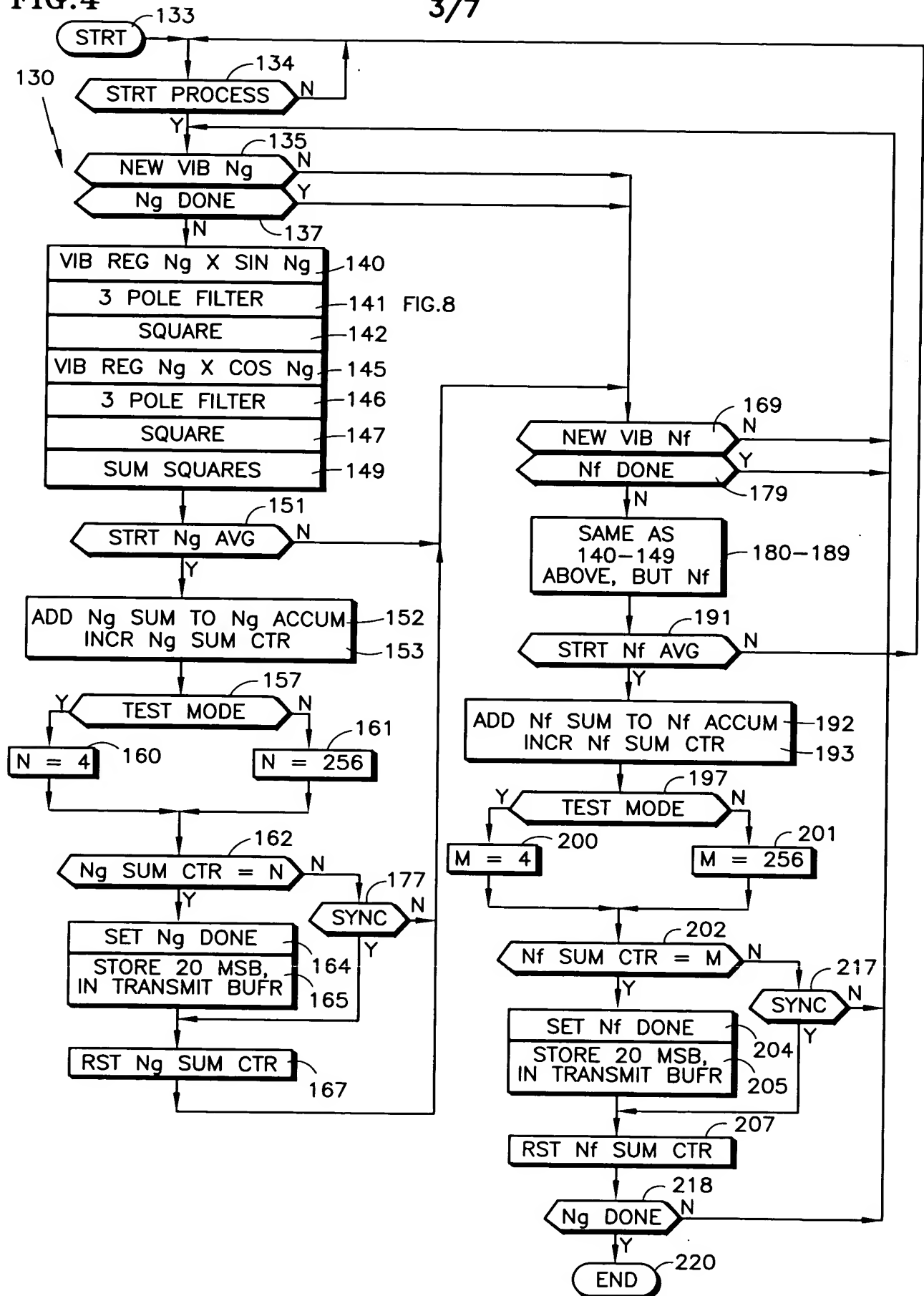


FIG.5

SEQ NO	SIN	COS	SEQ NO	SIN	COS
0	0.00	1.00	48	0.00	1.00
1	0.13	0.99	49	0.13	0.99
2	0.26	0.97	50	0.26	0.97
3	0.38	0.92	51	0.38	0.92
4	0.50	0.87	52	0.50	0.87
5	0.61	0.79	53	0.61	0.79
6	0.71	0.71	54	0.71	0.71
7	0.79	0.61	55	0.79	0.61
~	~	~	~	~	~
36	-1.00	0.00	84	-1.00	0.00
37	-0.99	0.13	85	-0.99	0.13
38	-0.97	0.26	86	-0.97	0.26
39	-0.92	0.38	87	-0.92	0.38
40	-0.87	0.50	88	-0.87	0.50
41	-0.79	0.61	89	-0.79	0.61
42	-0.71	0.71	90	-0.71	0.71
43	-0.61	0.79	91	-0.61	0.79
44	-0.50	0.87	92	-0.50	0.87
45	-0.38	0.92	93	-0.38	0.92
46	-0.26	0.97	94	-0.26	0.97
47	-0.13	0.99	95	-0.13	0.99

2 X 9.125 PPR

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FIG. 7

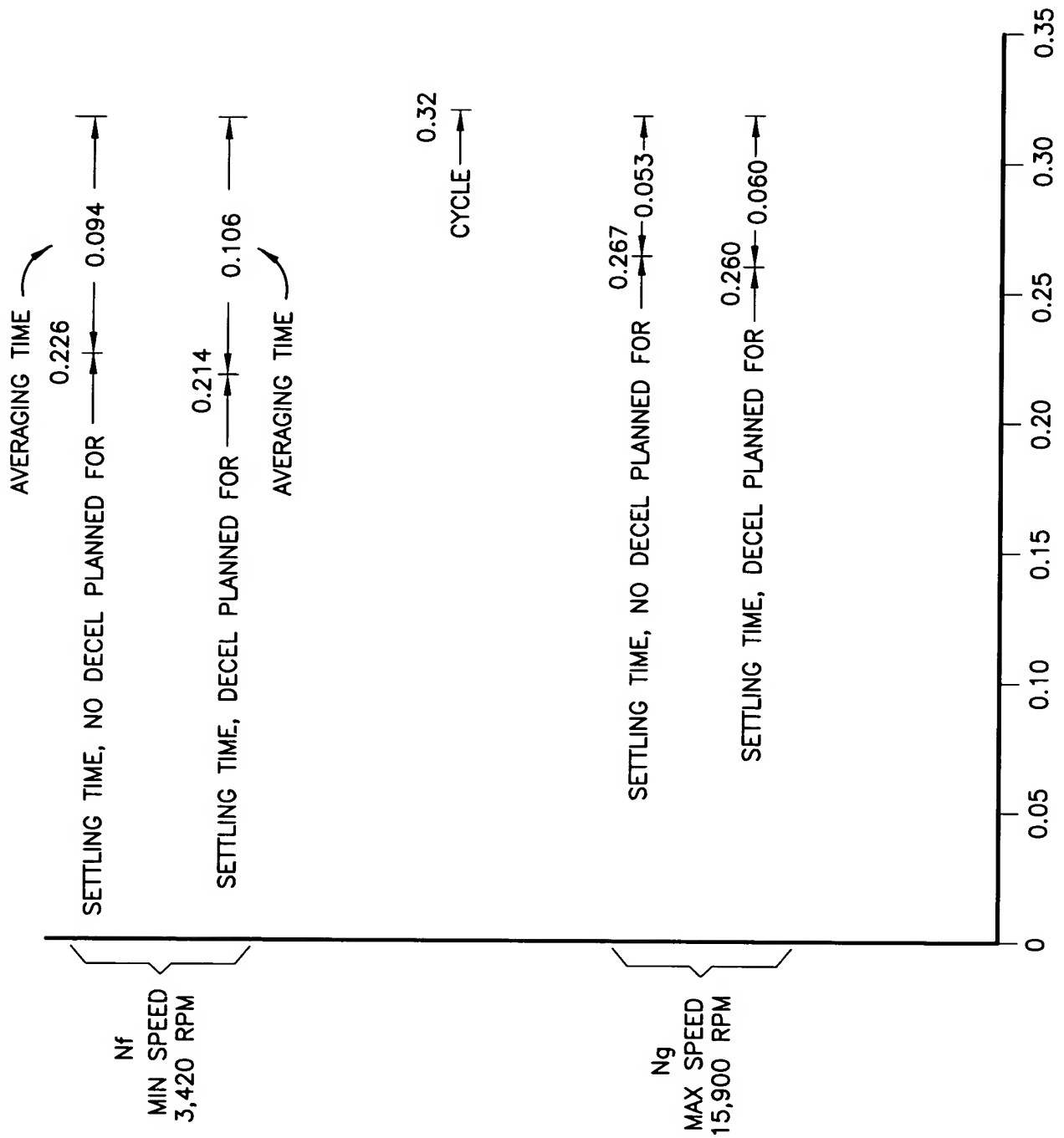


FIG.8

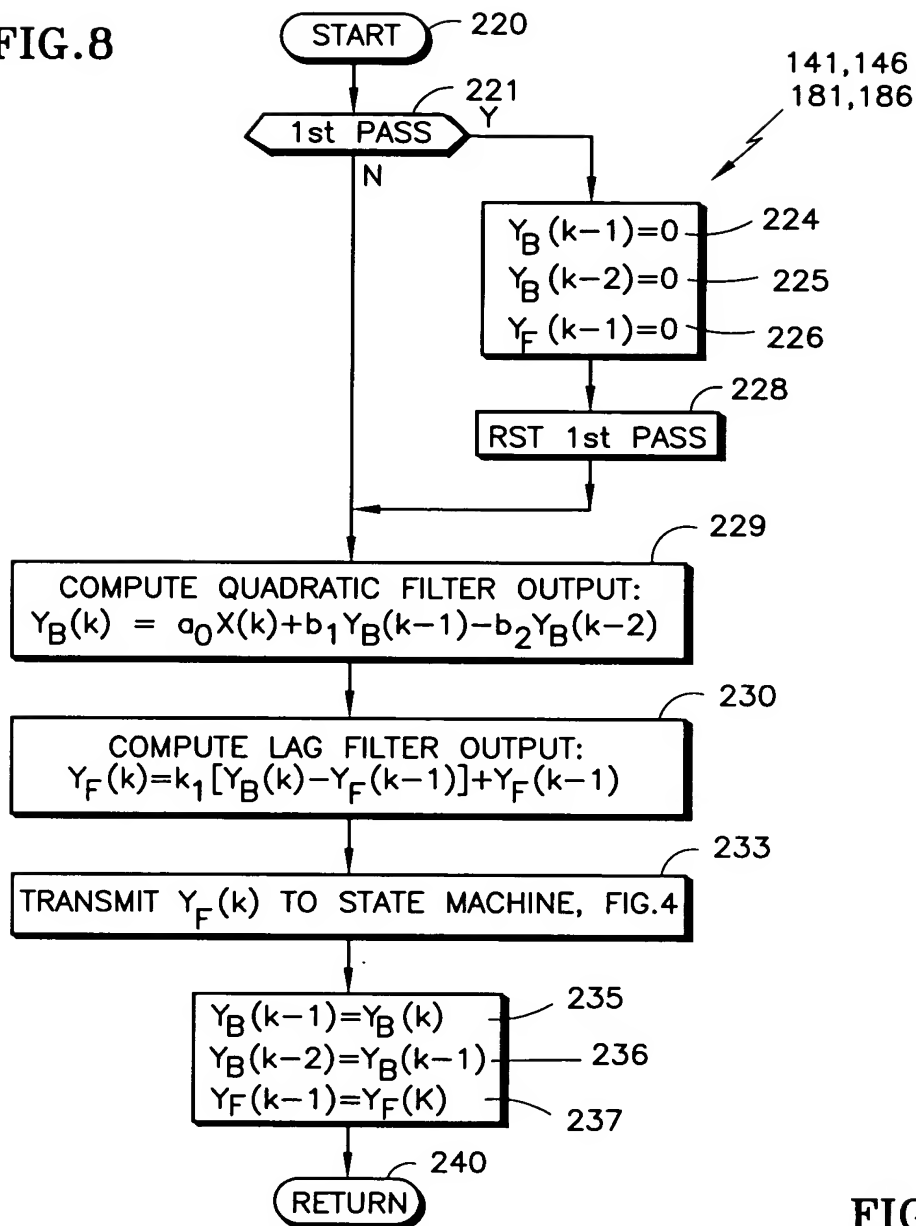


FIG.9

$X(k)$ = SIN N_g IN FILTER 141
 = COS N_g IN FILTER 146
 = SIN N_f IN FILTER 181
 = COS N_f IN FILTER 186

$$b_2 = \frac{1}{1 + 142.15T + 10,106.52T^2}$$

$$b_2 = b_2(-2 - 142.15T)$$

$$a_0 = 1 + b_1 + b_2$$

$$k_1 = 99.52T$$